

AIRBUS
Response to European Commission's
RSPG Consultation:

“DRAFT RSPG Second Opinion on 5G networks” (RSPG17-034)

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Introduction:

AIRBUS wishes to thank the Radio Spectrum Policy Group for having the opportunity to provide inputs to this consultation on the “DRAFT RSPG Second Opinion on 5G networks”, published on 21st November 2017.

AIRBUS notes that this second opinion on 5G networks is a further development of the roadmap to facilitate the launch of 5G on a large scale in Europe starting in 2020. The goal being that the benefits of 5G-based services are available to all European citizens in a timely manner, driving industrial and societal transformation and economic growth in Europe from 2020 and beyond.

We strongly believe that, while the technical and regulatory studies are still on-going, early 5G spectrum identification for technology developments shall focus on frequency bands studied under AI 1.13 in view of WRC-19, which provide a real potential for global harmonization.

AIRBUS is one of the company signatory of the 5G Manifesto with European Commissioner Günther Oettinger published on July 7th 2016. We strongly support 5G as an ecosystem of technologies.

Please find hereafter our comments on this second draft opinion.

RSPG Opinion 1: *The RSPG is of the opinion that Member States will need flexibility in the way they authorise access to spectrum, for example: appropriate geographical areas (e.g. national, regional, city or hyper-local, e.g. for use in a factory), individual licencing or under a general authorisation framework.*

AIRBUS would like to raise a word of caution with regard to the scope of a “flexible access to spectrum” as suggested by the RSPG.

We consider the geographical approach (e.g. national, regional, city or hyper-local) as an interesting approach, whose feasibility will depend on the frequency band considered, its current usage and its intrinsic propagation property, since low bands (UHF) are more suited for national coverage whereas mmWave bands are more adapted for hyper-local coverage. The incumbent services shall be considered in order to assess the feasibility of such approach on a case by case basis, according to the results of the sharing studies in particular.

Given the risks and uncertainty associated with a regime of general authorisation without granting individual spectrum right of use, AIRBUS is adverse to such an approach since the start of the deployment of 5G in the 26 GHz band.

We recommend to reviewing and eventually reconsidering the coexistence conditions in the future when there will be more certainty over the capabilities of the 5G equipment to actually coexist with other spectrum users without risk of creating harmful interference.

AIRBUS will take a proactive stand and study future evidence of real world cell deployments in terms of densities and quality of service requirements. It should be noted that there is a possibility to consider making the 66 GHz-71 GHz band available for 5G deployments under a general authorisation framework while risk of harmful interferences is negligible or not existing.

RSPG Opinion 2: *The RSPG is of the opinion that the Commission, together with Member States, should take actions to fully support 5G related policy objectives in rural areas and wide coverage, taking into account the role of satellite in achieving ubiquitous connectivity.*

AIRBUS agrees with this RSPG’s opinion, and supports any initiatives aiming at considering broadband access as a universal service, with related obligations for Member States to fill the digital divide in rural and remote areas, where satellite can definitely play an important role in achieving ubiquitous broadband connectivity anywhere.

Airbus would like to recall the EC Communication on Space Strategy 2016 which states that:

“Space and satellite communications can also improve connectivity for Europe’s digital society and economy. Satellites can provide cost-effective solutions in particular to connect assets and people in remote and offshore areas, or as part of the future 5G networks, where numerous applications and services using space data will also require uninterrupted connectivity.”

RSPG Opinion 3: *The RSPG recommends that the Commission, in its research work-programs, study solutions for improving 5G connectivity and wide area coverage, especially in rural areas, thereby facilitating and progressing technology developments targeting the fulfilment of 5G related policy objectives.*

AIRBUS supports RSPG's recommendation, especially if the Commission research work-programs promote the principle of technological neutrality (e.g. terrestrial, HAPS, satellite, etc.).

RSPG Opinion 4: *The RSPG is of the opinion that service performance and availability requirements may be relevant for some 5G cross border services to fully function and would need to be defined by the industry in a timely manner. In some cases an EU coordinated approach could be helpful in this regard to support a common European solution.*

New satellite systems are evolving to provide affordable backhaul to accelerate the transition to 4G/LTE and for the upcoming 5G. AIRBUS is of the view that both satellites and HAPS can bring valuable solutions for future 5G cross border services.

RSPG Opinion 5: *The RSPG is of the opinion that coverage obligations can only be derived as a consequence of national policy objectives and characteristics (i.e. population distribution, geographical morphology, industrial and societal needs) and therefore cannot be harmonised on a EU-level.*

Airbus has no specific comment on Opinion 5, other than the one already expressed in Opinion 2

RSPG Opinion 6: *The RSPG notes that solving issues relating to facilitating the efficient deployment of ultra-dense networks is expected to be of high importance for the rollout of 5G in dense urban areas. The RSPG is of the opinion that Member States should assess the need for national actions that will enable easier site authorisation and installation, in particular for small cells, in order to make timely 5G deployment possible.*

AIRBUS has no specific comment on Opinion 6

RSPG Opinion 7: *The RSPG is of the opinion that all commercial licences in frequency bands identified for 5G within the Member States should be subject to trading or leasing to enable new market opportunities.*

AIRBUS supports RSPG opinion 7 as long as secondary trading or leasing will be limited among the same service and technology users of the spectrum, in full respect with the obligations to protect other services users in the band and in adjacent bands from causing harmful interferences.

RSPG Opinion 8: *The RSPG is of the opinion that Member States should consider appropriate measures to defragment the 3.6 GHz band, the primary 5G band, in time for authorising sufficiently large blocks of spectrum by 2020.*

AIRBUS has no specific comment on Opinion 8

RSPG Opinion 9: *The RSPG is of the opinion that in relation to the 26 GHz pioneer band (24.25 - 27.5 GHz):*

- *the focus of 5G authorisations in the 26 GHz band should be on an individual licence regime. However, the possibility of a general authorisation regime under sharing conditions that protect the other users of spectrum in this band (e.g. EESS/SRS) is not excluded.*
- *the Commission should include as part of any technical harmonisation for the 26 GHz band, in high level terms, the requirements to maintain the possibility for continued development of incumbent satellite services (FSS and EESS/SRS). Future earth stations should be authorised based on transparent, objective and proportionate criteria to safeguard their future operations and ensuring that they are unlikely to have a significant impact on 5G deployment and coverage. Member States will remain fully responsible for granting or rejecting authorisation to a new satellite earth station application.*
- *Member States should make by 2020 a sufficiently large portion of the band, e.g. 1 GHz, available for 5G in response to market demand, taking into account that 5G deployment in this frequency range is expected to be used for local coverage.*

Regulatory flexibility for the progressive release of the 26 GHz band will facilitate an efficient introduction of 5G without having an unnecessary negative impact on the current users of the band. Member States should plan any migration of fixed links necessary for ensuring the availability of the band for 5G, taking into account the geographical dimension of the market demand for 5G.

There is a legal obligation to protect existing users under European Union law and Article 1.2 (a) of the Spectrum Decision 676/2002/EC.

On this basis AIRBUS “legitimate expectation” to continue using and having a viable access to the 26 GHz band in the future is justified by the significant level of investment that the company in a PPP with the European Space Agency (ESA) has engaged for the EDRS system including in the framework of the Copernicus Program.

AIRBUS recalls that the “Authorisation Directive”¹ creates a legal framework to ensure the freedom to provide electronic communications networks and services throughout the European Union.

As indicated in Art 3.2 of the directive 2002/20/EC, the provision of electronic communications networks or services may only be subject to a general authorisation.

¹ Directive 2002/20/EC of the European Parliament and of the Council of 7 March 2002 on the authorization of electronic communications networks and services (Authorization Directive)

Member states shall facilitate the use of radio frequencies under general authorisations but, where necessary – e.g. to protect existing services deployed e.g. at 26 GHz (EESS, FSS, ISS SRS) – should make the use of radio frequencies subject to the grant of individual rights of use with a view to (cft Art 5.2 of Directive 2002/20/EC):

- Avoiding harmful interference;
- Ensuring the technical quality of service;
- Safeguarding efficient use of spectrum;
- Fulfilling other general interest objectives defined by EU countries.

AIRBUS interpretation of “*individual licence regime*” within the scope of this consultation and based on Art 5.2 of the 2002/20/EC Directive is: Member states make the use of radio frequencies subject to the grant of individual rights of use that includes the conditions for usage of such radio frequencies.

AIRBUS interpretation of “*general authorisation regime*” within the scope of this consultation and based on Art 5.1 of the 2002/20/EC Directive is: Member states do not make the use of radio frequencies subject to the grant of individual rights of use but include the conditions for usage of such radio frequencies in the general authorisation.

Avoiding harmful interference from IMT mobile stations and ensuring the technical quality of service are actually the main concerns of existing services at 26 GHz, the band identified as a pioneer band for 5G (IMT-2020) in Europe. As sharing studies show that harmful interferences are not negligible, AIRBUS is in favour of an “*individual licence regime*” for 5G networks in the band.

The individual licences granted by the relevant national administrations should include conditions in line with the results of the sharing studies, to ensure the protection of the existing services today but also in view of their future deployment in the band.

AIRBUS expresses its serious concerns about the possibility of not excluding the “*general authorisation regime*” option as referred above while authorizing 5G systems in the 26 GHz band.

As a general rule, where spectrum sharing is contemplated it is essential that existing (incumbent), services are afforded appropriate protection to establish a co-existence regime immune from harmful interference.

AIRBUS trusts that the EU Electronic Communications Code will guarantee this protection as a key principle for the future.

RSPG Opinion 10: *The RSPG is of the opinion that general authorised frequency use can be an important breeding ground for innovation and contributes towards a dynamic market environment. The application of a general authorisation regime is foreseen in the 66-71 GHz band which could be an important band for 5G.*

AIRBUS fully supports RSPG's opinion 10. As stated before, there should indeed be a possibility to consider making the 66 GHz-71 GHz band available for 5G deployments under a general authorisation regime. This high bands spectrum already could support very high capacity carriers, enabled by 5G/IMT systems in both indoor and outdoor environments. The use of these bands would also benefit from potential synergies with WiGig – currently being deployed at 61 GHz – for which chipsets are already being manufactured.²

Other topic of interests: ECC Liaison Statement to the ETSI (L17-ECC-015 of Nov 2017):

AIRBUS would also take this opportunity to raise an issue related to unwanted emissions from 5G systems.

In November 2017, the ECC wrote to ETSI to raise concerns about the high risks of interference which could be caused by unwanted emissions from 5G systems on existing services/applications operating in the 26 GHz in particular. ETSI defined IMT 5G standards including 5G unwanted emissions limits which are much higher than the unwanted limits recommended by CEPT and ITU. It has to be noted that the ETSI standards are now incorporated in the ITU documentation related to WRC-19 Agenda Item 1.13 and these standards would be applicable to all 5G frequency bands, not only at 26 GHz.

The proposed limit is so relaxed that it risks to impact active (and not only passive) services: in particular, it would complicate compatibility with, and put undue constraints to, satellite communications services operating above 3800 MHz or above 27.5 GHz (in bands adjacent to 3400-3800 MHz and 26 GHz).

The liaison statement from ECC to ETSI emphasises about how insufficient the limits to 5G unwanted emissions may be, stating that "*The introduction of a new technology should not result in harmful interference to other systems and should ensure efficient use of the spectrum.*" ECC reminds ETSI about the limits applicable in Europe (as defined in ERC/REC/74-01 of the CEPT) and invites ETSI to take these into account in their standards.

AIRBUS fully supports the ECC letter and sincerely hopes that appropriate measures from decision-making bodies will be adopted in order to ensure efficient, fair and equitable usage of the spectrum.

Conclusion

AIRBUS calls for appropriate authorization conditions and legal certainties to define a predictable spectrum sharing environment enabling a viable ecosystem for all users in the long term.

AIRBUS relies on decision-making bodies to ensure efficient, justified and equitable access and usage of the pioneer spectrum identified for 5 G networks and would expect that authorization conditions for terrestrial 5G operations will comply with these requirements. In particular, AIRBUS expects that the new 5G regulatory framework will be defined in such a way that it will ensure that

² ABI Research forecasts 180 million WiGig chipsets will ship to the smartphone market in 2017, with smartphone chipsets accounting for almost half of the 1.5 billion total market shipments in 2021 (<https://www.abiresearch.com/press/mobile-and-computing-markets-catapult-60-ghz-wigig/>)

existing services authorized in the band will be protected and that they will be able to continue developing new applications and to continue deploying new systems.

AIRBUS is of the view that taking into account available result of compatibility studies in the 26 GHz band carried out in CEPT and at ITU, only an “*individual licence regime*” (need to grant individual spectrum right of use) could adequately address our legitimate expectations in this band.

Finally AIRBUS thanks the Radio Spectrum Policy Group for giving the opportunity to provide comments to the “DRAFT RSPG Second Opinion on 5G networks” consultation.